

- Stopping Sight Distance Calculations

Stopping Sight Distance

Westerly Site Driveway - Average Travel Speed

		SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE (FT)	CALCULATED STOPPING SIGHT DISTANCE (FT)
Direction 1	EB	44	161.7	175.4	337.1
Direction 2	WB	44	161.7	191.0	352.7

INPUTS

Direction 1

Direction 2

Travel Direction

EB

WB

Speed

44

44

Grade

0.02

-0.01

t

2.5

2.5

a

11.2

11.2

Stopping Sight Distance (SSD) - Source: AASHTO

SSD = Reaction Distance + Brake Distance

Reaction Distance = $1.47 \times t \times V$

Brake Distance = $V^2 / (30 \times ((a/32.2)+G))$

Where:

t = reaction time (sec)

V = travel speed (mph)

G = roadway grade

a - deceleration rate (ft/sec²)

Stopping Sight Distance

Easterly Site Drive - Average Travel Speed

		SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE (FT)	CALCULATED STOPPING SIGHT DISTANCE (FT)
Direction 1	EB	44	161.7	185.5	347.2
Direction 2	WB	44	161.7	196.9	358.6

INPUTS

Direction 1

Direction 2

Travel Direction
Speed
Grade
t
a

EB
44
0
2.5
11.2

WB
44
-0.02
2.5
11.2

Stopping Sight Distance (SSD) - Source: AASHTO

SSD = Reaction Distance + Brake Distance

Reaction Distance = 1.47 x t x V

Brake Distance = $V^2 / (30 \times ((a/32.2)+G))$

Where:

t = reaction time (sec)

V = travel speed (mph)

G = roadway grade

a = deceleration rate (ft/sec²)

Stopping Sight Distance

Westerly Site Drive - 85th Percentile Travel Speed

		SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE (FT)	CALCULATED STOPPING SIGHT DISTANCE (FT)
Direction 1	EB	47	172.725	200.2	372.9
Direction 2	WB	50	183.75	246.7	430.4

INPUTS

Direction 1

Direction 2

Travel Direction	EB	WB
Speed	47	50
Grade	0.02	-0.01
t	2.5	2.5
a	11.2	11.2

Stopping Sight Distance (SSD) - Source: AASHTO

SSD = Reaction Distance + Brake Distance

Reaction Distance = 1.47 x t x V

Brake Distance = $V^2 / (30 \times ((a/32.2)+G))$

Where:

t = reaction time (sec)

V = travel speed (mph)

G = roadway grade

a = deceleration rate (ft/sec²)

Stopping Sight Distance

Easterly Site Drive - 85th Percentile Travel Speed

		SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE (FT)	CALCULATED STOPPING SIGHT DISTANCE (FT)
Direction 1	EB	47	172.725	211.7	384.4
Direction 2	WB	50	183.75	254.2	437.9

INPUTS

Direction 1

Direction 2

Travel Direction	EB	WB
Speed	47	50
Grade	0	-0.02
t	2.5	2.5
a	11.2	11.2

Stopping Sight Distance (SSD) - Source: AASHTO

SSD = Reaction Distance + Brake Distance

Reaction Distance = 1.47 x t x V

Brake Distance = $V^2 / (30 \times ((a/32.2)+G))$

Where:

t = reaction time (sec)

V = travel speed (mph)

G = roadway grade

a = deceleration rate (ft/sec²)